

CLAIMS

What is claimed is:

1. A hard disk drive, comprising:
 - an enclosure having a spindle motor mounted thereto and an axial thickness;
 - a magnetic disk mounted to the spindle motor for rotation relative to the enclosure, the magnetic disk having an axis of rotation and a storage area;
 - an actuator mounted to the enclosure and having a head for reading information from and/or writing information to the magnetic disk; and
 - the enclosure also having a disk region located over at least a portion of the storage area of the magnetic disk, the disk region having an axial thickness that is less than the axial thickness of the enclosure to define a working magnetic gap for erasing the magnetic disk while the magnetic disk is inside the enclosure.
2. The hard disk drive of claim 1, wherein the enclosure has a base and a cover, and the disk region is located on portions of both the base and the cover.
3. The hard disk drive of claim 1, wherein the disk region is formed by an indentation in the enclosure.
4. The hard disk drive of claim 3, wherein the indentation is a rectangular notch.
5. The hard disk drive of claim 1, wherein the disk region has a length extending in a radial direction, relative to the axis of the magnetic disk, that spans an entire radial length of the storage area of the magnetic disk, such that the entire storage area may be erased.
6. The hard disk drive of claim 5, wherein the disk region has a width that is transverse to the radial direction, and the width is less than a width of the enclosure.

7. The hard disk drive of claim 6, wherein the enclosure comprises a base and a cover, and the width of the disk region on the base differs from the width of the disk region on the cover.

8. The hard disk drive of claim 1, wherein the working magnetic gap reduces stray magnetic fields to prevent motor rotor demagnetization damage, and increases a gradient of magnetic flux density as the hard disk drive is inserted into a disk erase apparatus.

9. A system for erasing a magnetic disk in a hard disk drive, comprising:
a disk erase apparatus having a high strength magnetic field for erasing a magnetic disk while the magnetic disk is located inside a hard disk drive assembly;
a hard disk drive having an enclosure and a magnetic disk mounted inside the enclosure for storing information, the magnetic disk having a storage area and defining an axis of rotation and a radial direction relative to the axis; and
the enclosure having an axial thickness and a disk region located over a radial portion of the magnetic disk, the disk region having an axial thickness that is less than the axial thickness of the enclosure, and the disk region providing a working magnetic gap for the disk erase apparatus so that the magnetic disk can be erased inside the hard disk drive assembly.
10. The system of claim 9, wherein the hard disk drive assembly is inserted into a magnetic gap of the disk erase apparatus, and the magnetic gap defines an axial dimension that is greater than the axial thickness of the disk region and less than the axial thickness of the enclosure.
11. The system of claim 9, wherein the enclosure includes a base and a cover, and the disk region is located on portions of both the base and the cover.
12. The system of claim 9, wherein the disk region is formed by an indentation in the enclosure.
13. The system of claim 12, wherein the indentation is a rectangular notch.
14. The system of claim 9, wherein the disk region has a length extending in the radial direction that spans an entire radial length of the storage area of the magnetic disk, such that the entire storage area may be erased.
15. The system of claim 14, wherein the disk region has a width that is transverse to the radial direction, and the width is less than a width of the enclosure.

16. The system of claim 15, wherein the enclosure comprises a base and a cover, and the width of the disk region on the base differs from the width of the disk region on the cover.

17. The system of claim 9, wherein the working magnetic gap reduces stray magnetic fields to prevent motor rotor demagnetization damage, and increases a gradient of magnetic flux density as the hard disk drive is inserted into the disk erase apparatus.